

Title (en)
CATALYST, AND METHOD FOR DIRECT CONVERSION OF SYNGAS TO PREPARE LIQUID FUEL AND TO PRODUCE LIGHT OLEFINS

Title (de)
KATALYSATOR UND VERFAHREN ZUR DIREKTEN UMWANDLUNG VON SYNTHESYGAS ZUR ZUBEREITUNG VON FLÜSSIGEM
BRENNSTOFF UND ZUR HERSTELLUNG VON LEICHTEN OLEFINEN

Title (fr)
CATALYSEUR ET PROCÉDÉ DE CONVERSION DIRECTE DE GAZ DE SYNTHÈSE POUR PRÉPARER UN COMBUSTIBLE LIQUIDE ET
PRODUIRE DES OLÉFINES LÉGÈRES

Publication
EP 3632556 A4 20210120 (EN)

Application
EP 18810149 A 20180802

Priority
• CN 201710408016 A 20170602
• CN 2018098378 W 20180802

Abstract (en)
[origin: EP3632556A1] The present invention belongs to preparation of liquid fuels and light olefins from syngas, and particularly relates to a catalyst and a method for preparing liquid fuels and light olefins via direct conversion of syngas. The syngas is used as the raw material, and the reaction is conducted on a fixed bed or a moving bed. The catalyst comprises A and B components. The component A is composed of active metal oxides, and the active ingredients of the component B are zeolites with a MEL structure. The distance between the geometric centers of catalyst A and catalyst B particles is 2 nm - 10 nm; a weight ratio of the catalyst A to the catalyst B is 0.1-20. The pressure of the syngas is 0.1-10 MPa; reaction temperature is 300-600°C; and space velocity is 300-10000 h⁻¹. The reaction mainly produces gasoline with high octane number, and co-generates light olefins. Meanwhile, the selectivity for a methane byproduct is low (less than 10%). The present invention has excellent application prospect.

IPC 8 full level
B01J 29/48 (2006.01); **B01J 23/00** (2006.01); **B01J 23/06** (2006.01); **B01J 23/26** (2006.01); **B01J 23/34** (2006.01); **B01J 37/04** (2006.01); **C07C 11/04** (2006.01); **C07C 11/06** (2006.01); **C07C 11/08** (2006.01); **C10G 2/00** (2006.01)

CPC (source: CN EP US)
B01J 23/005 (2013.01 - EP US); **B01J 23/06** (2013.01 - EP US); **B01J 23/10** (2013.01 - US); **B01J 23/26** (2013.01 - EP US); **B01J 23/34** (2013.01 - EP US); **B01J 29/40** (2013.01 - EP); **B01J 29/405** (2013.01 - CN US); **B01J 29/48** (2013.01 - CN EP US); **B01J 37/04** (2013.01 - EP US); **C07C 1/043** (2013.01 - CN EP); **C10G 2/334** (2013.01 - CN EP US); **B01J 2229/186** (2013.01 - CN); **C07C 2521/06** (2013.01 - EP); **C07C 2523/06** (2013.01 - EP); **C07C 2523/10** (2013.01 - EP); **C07C 2523/26** (2013.01 - EP); **C07C 2523/34** (2013.01 - EP); **C07C 2529/40** (2013.01 - CN EP); **C07C 2529/48** (2013.01 - CN); **C10G 2400/02** (2013.01 - US); **C10G 2400/20** (2013.01 - EP US); **C10G 2400/26** (2013.01 - US); **Y02P 20/52** (2015.11 - EP); **Y02P 30/40** (2015.11 - EP)

Citation (search report)
• [X] US 4180516 A 19791225 - CHANG CLARENCE D [US], et al
• [XA] US 2013217935 A1 20130822 - ADAM CINDY [BE], et al
• [XA] US 2016024393 A1 20160128 - BEECH JR JAMES H [US], et al
• See references of WO 2018219364A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 3632556 A1 20200408; **EP 3632556 A4 20210120**; CN 108970635 A 20181211; CN 108970635 B 20210119; US 11097253 B2 20210824; US 2020276559 A1 20200903; WO 2018219364 A1 20181206

DOCDB simple family (application)
EP 18810149 A 20180802; CN 201710408016 A 20170602; CN 2018098378 W 20180802; US 201816618749 A 20180802